Amendments to the Drawings:

The attached sheets of drawings include changes to Figs. 1-6. A brief descriptive label has been provided for each numbered block in Figs. 1-3 and 5-6. "303" has been changed to "308" in Fig. 3. A legend "PRIOR ART" has been provided in Figs. 1-4.

These sheets replace the original sheets.

Attachment: Replacement Sheets

Annotated Sheets Showing Changes

REMARKS

In the subject Action, the Examiner rejected claims 1-4, 7-11, 14-18, 21-25, 28-32, 35-39, 42-46, 49-53, and 56. Applicants have amended claims 2-7, 65, 9-14, 66, 70, 16-21, 67, 71, 23-28, 68, 72, 30-35, 37-42, 44-49, 51-56, and 69. Claims 1-60 and 65-72 remain pending in the present application. No new matter has been entered hereby. In light of the foregoing amendments and the following remarks, Applicants respectfully request a Notice of Allowance.

Drawings and Specification

At paragraph 1 of the subject Action, the drawings were objected to because a brief descriptive label must be provided for each numbered block, particularly in Figs. 1-3 and 5-6. A brief descriptive label has been provided for each numbered block in Figs. 1-3 and 5-6.

Paragraph 1 also referred to a typographic error in the reference number "303" in Fig. 3. "303" has been changed to "308".

At paragraph 2, the Examiner suggested that Figs. 1-4 should be designated as "Prior Art". Figs. 1-4 have been labeled in this manner.

The Abstract of the disclosure was objected to because of improper language and format. Applicants have amended the Abstract and assert that the objection has been overcome.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the objections.

Claim Objections

The Examiner next objected to claims 2-7, 9-14, 66, 70, 16-21, 67, 71, 23-28, 68, 72, 30-35, 37-42, 44-49, 51-56, and 69 because of various informalities. The above claims have been amended to be consistent with current U.S. practice. Applicants have also amended claim 65 to

be consistent with current U.S. practice. Accordingly, Applicants respectfully request reconsideration and withdrawal of the objection.

§103 Rejections

At paragraph 8, the Examiner rejected claims 1-4, 7-11, 14-18, 21-25, 28-32, 35-39, 42-46, 49-53, and 56 under §103(a) as being obvious over Raisanen et al. in view of Boda et al.. Applicants traverse this rejection in view of the arguments below.

1. Independent Claim 1

Claim 1 is directed to a method of shaping input packet traffic that includes a step of determining a constraint parameter dependent upon a probability density function. Further, constraining transmission of input packet traffic based on the constraint parameter produces output packet traffic having a pre-determined entropy bound. The shaping of traffic according to the claimed method allows effective bandwidth principles to be applied enabling better use of network resources. In addition, the use of the claimed method allows network users to define their network performance requirements in terms of a statistical probability of achieving a desired Quality of Service (QoS), rather than by specifying a deterministic QoS bound.

In sharp contrast, Raisanen et al. is directed to a traffic shaper for guaranteeing proper QoS for different types of real-time traffic applications such as interactive audio and/or video while concomitantly providing keep-alive bandwidth for best-effort traffic. The guaranteed QoS of Raisanen et al. is a deterministic QoS bound, and thus teaches directly away from the claimed method. Raisanen et al. also makes repeated mention of the intention to provide a real-time traffic shaper configured for priority forwarding of real-time traffic while providing keep-alive bandwidth for best-effort traffic at the same time. See, e.g., col. 12, ll. 38-42.

Moreover, Raisanen et al. fails to disclose or teach using entropy as a parameter upon which traffic shaping is to depend. For example, as admitted in the Office Action, Raisanen et

al. fails to disclose and/or teach "determining a constraint parameter dependent upon a probability density function." Raisanen et al. then also fails to disclose and/or teach "constraining, based upon said parameter, transmission of the input packet traffic, thereby to produce output packet traffic having a pre-determined entropy bound."

Also in sharp contrast, Boda et al. is directed to telecommunication networks and more particularly to distribution of recourses of a physical network among logical links and the neural networks in this distribution process. See, e.g., col. 1, ll. 6-9. Boda et al. is concerned with distributing transmission capacity among logical links in an optimal way. The probability density function of Boda et al. characterizes ideal traffic. Moreover, the parameter used to shape the traffic is the difference between actual and ideal traffic characteristics. In contrast, the method of claim 1 constrains traffic according to a probability distribution function. In other words, it is the probability distribution function itself, and not the difference between ideal traffic and a probability density function which is used to constrain the traffic.

Finally, even presupposing that Raisanen et al. and Boda et al. are combined, neither cited references disclose and/or teaches a method including "packet traffic having a pre-determined entropy bound." Furthermore, Raisanen et al. is directed to a traffic shaper for guaranteeing QoS, thus teaching directly away from the claimed method which is directed to achieving a statistical probability of achieving a desired concerned with QoS, rather than a deterministic QoS bound. Moreover, Boda et al. is not concerned with QoS, either statistics or deterministic. Further, in Boda et al. it is the difference between probability density of ideal traffic and that of actual traffic which is to constrain the (actual) traffic, rather than the probability density itself as is the case with the claimed invention.

Therefore, no combination of the cited references teaches a method or an article that includes determining a constraint parameter dependent upon a probability density function and

constraining, based upon said parameter, transmission of the input packet traffic, thereby to produce output packet traffic having a pre-determined entropy bound.

Applicants respectfully request reconsideration and withdrawal of the pending rejection.

2. **Independent Claims 8, 15, 22, 29, 36, 43, and 50**

Claims 8, 15, 22, 29, 36, 43, and 50 recite features that are same or equivalent to those referred to above in regard to claim 1. It is thus submitted, for at least the reasons noted, that claims 8, 15, 22, 29, 36, 43, and 50 are patentable.

3. **Dependent Claims**

Claims 2-4, 7, 9-11, 14, 16-18, 21, 23-25, 28, 30-32, 35, 37-39, 42, 44-46, 49, 51-53, and 56 are dependent claims and so are also believed to be allowable over the art of record. Applicants do not otherwise concede the correctness of the Examiner's rejection and reserve the right to make additional arguments as may be necessary. Applicants respectfully request reconsideration and withdrawal of the pending rejection.

Allowable Subject Matter

Applicants thank the Examiner for the indication that claims 57-60 recite allowable subject matter.

Claims 5-6, 12-13, 19-20, 26-27, 33-34, 40-41, 47-48, 54-55, and 65-72 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. The rejections under §103 have been overcome because of at least the reasons stated above. Moreover, claims 5-6, 12-13, 19-20, 26-27, 33-34, 40-41, 47-48, 54-55, and 65-72 depend from an independent claim of claims 1, 8, 15, 22, 29, 36, 43, and 50, and

include all of the elements of the independent claim, which is patentable because of at least the reasons stated above. Therefore, the pending claims 5-6, 12-13, 19-20, 26-27, 33-34, 40-41, 47-48, 54-55, and 65-72 are allowable.

Conclusion

This response is believed to be responsive to all points raised in the Office Action. Accordingly, Applicants respectfully request reconsideration and allowance of all of the currently pending claims. Should the Examiner have any remaining questions or concerns, the Examiner is urged to contact the undersigned attorney at 612.336.4755 to discuss the same.

Respectfully submitted,

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23552
PATENT TRADEMARK OFFICE

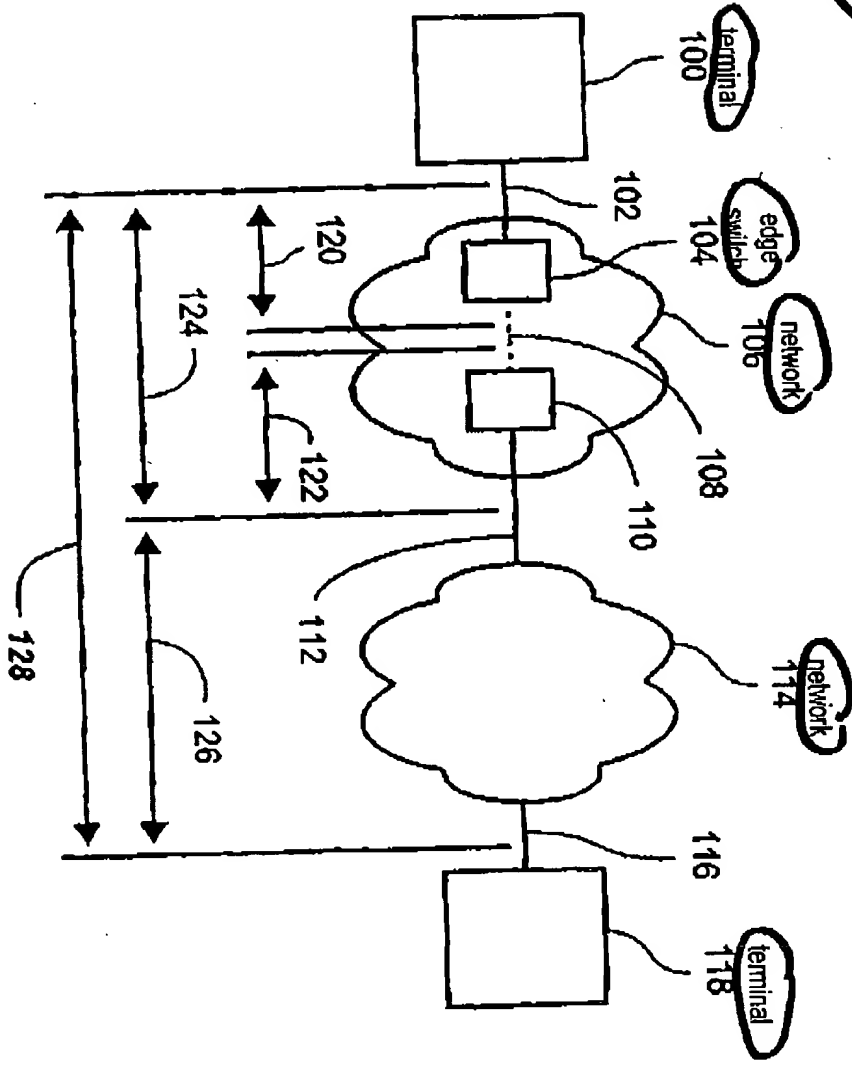
Dated: 29 September 2005

By _____
Brian H. Batzli
Reg. No. 32,960

BHB:SZ:krn

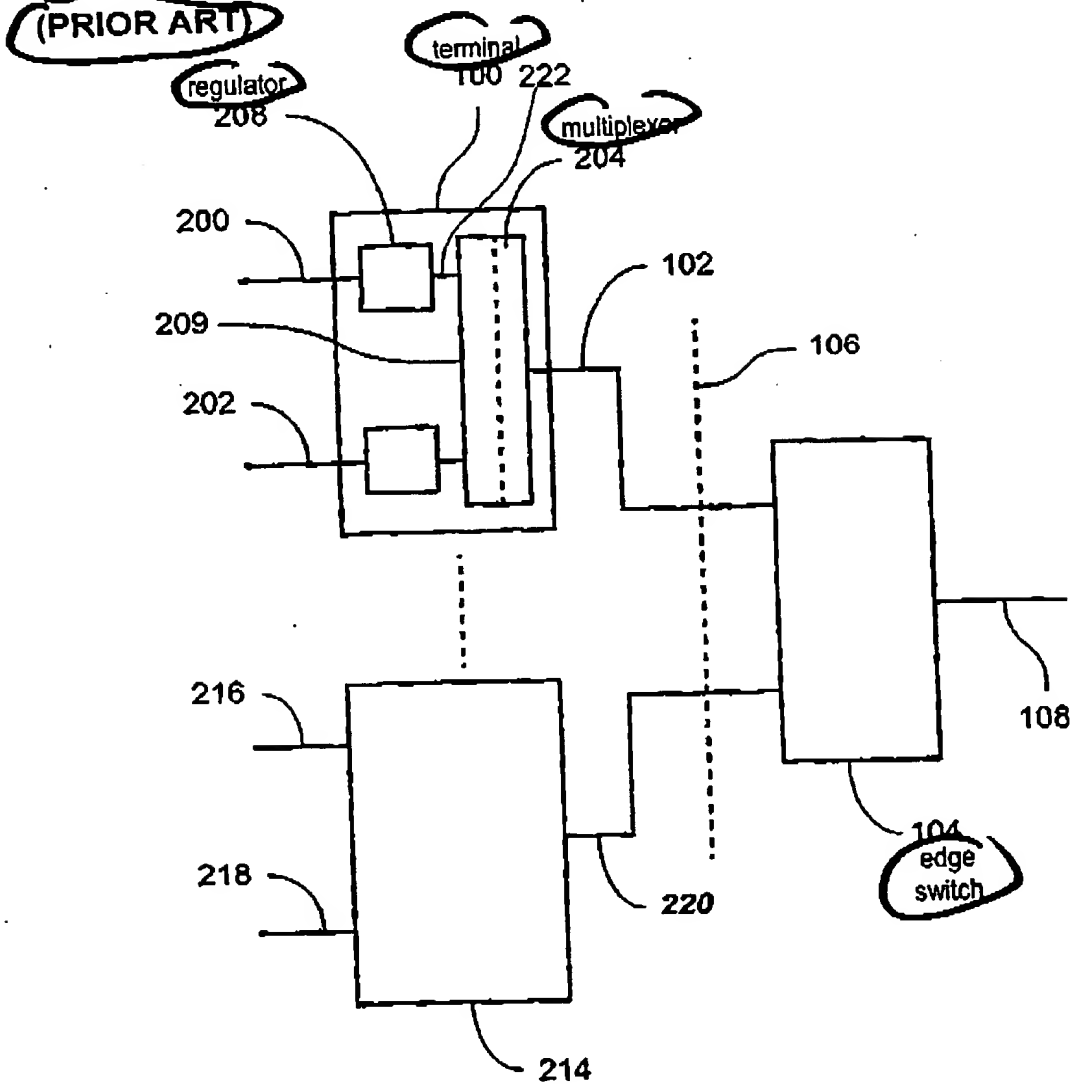
Inventor: Malancy et al.
Docket No.: 03961.0046US01
Title: TELECOMMUNICATIONS TRAFFIC REGULATOR
Serial No.: 09/844477
Annotated Sheet 1 of 6

FIG. 1
(PRIOR ART)



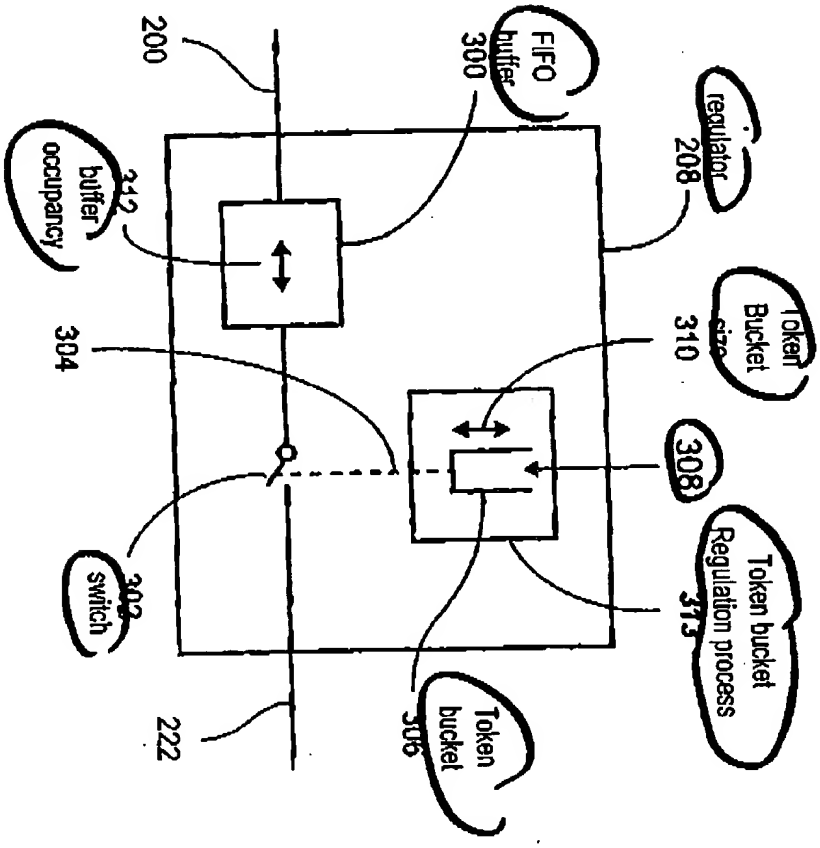
Inventor: Malaney et al.
Docket No.: 03961.0046US01
Title: TELECOMMUNICATIONS TRAFFIC REGULATOR
Serial No.: 09/644477
Annotated Sheet 2 of 6

FIG. 2
(PRIOR ART)



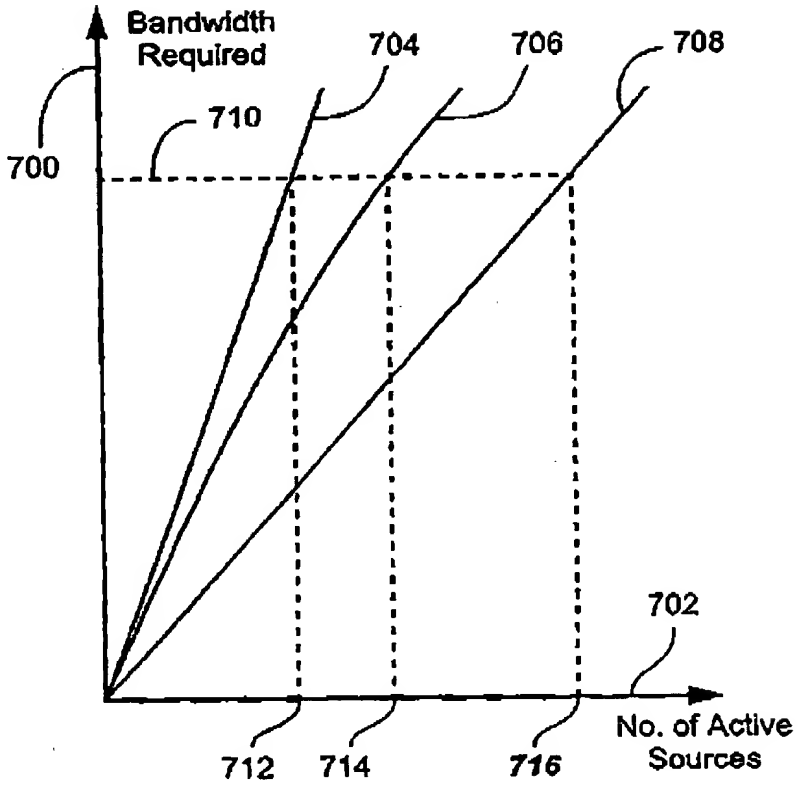
Inventor: Mahany et al
Docket No.: 03961.0046US01
Title: TELECOMMUNICATIONS TRAFFIC REGULATOR
Serial No.: 09/844477
Annotated Sheet 3 of 6

FIG. 3
(PRIOR ART)



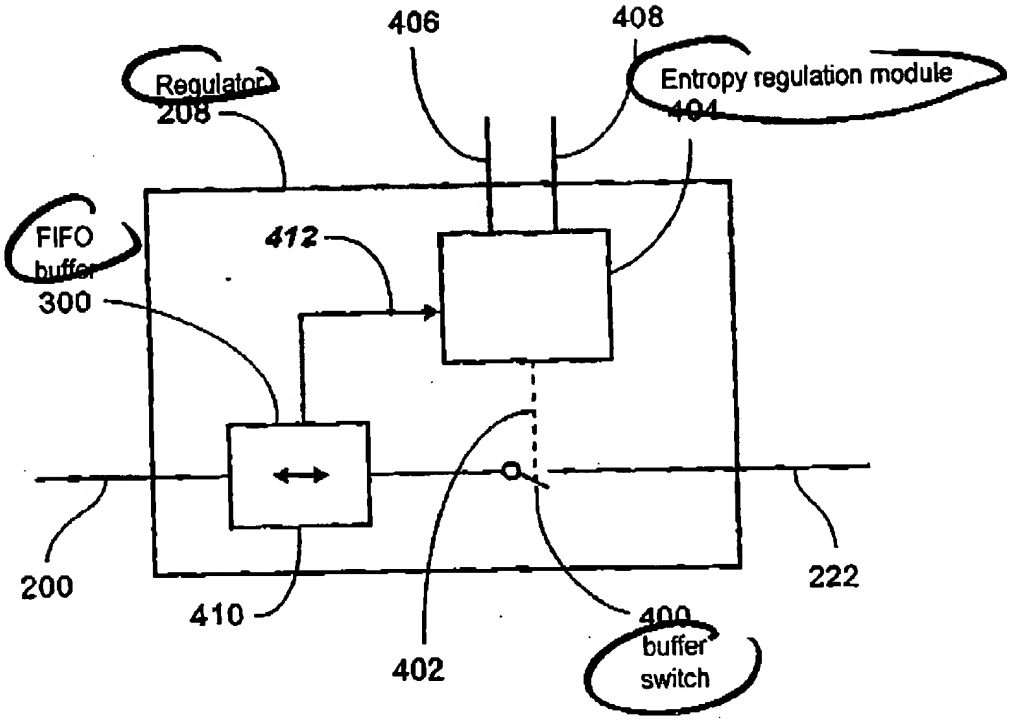
Inventor: Maloney et al.
Docket No.: 03961.0046US01
Title: TELECOMMUNICATIONS TRAFFIC REGULATOR
Serial No.: 09/844477
Annotated Sheet 4 of 6

FIG. 4
(PRIOR ART)



Inventor: Malaney et al.
Docket No.: 03961.0046US01
Title: TELECOMMUNICATIONS TRAFFIC REGULATOR
Serial No.: 09/844477
Annotated Sheet 5 of 6

FIG. 5



Inventor: Malaney et al.
Docket No.: 03961.0046US01
Title: TELECOMMUNICATIONS TRAFFIC REGULATOR
Serial No.: 09/844477
Annotated Sheet 6 of 6

FIG. 6